



BEFORE YOU FLY

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WELCOME TO FLIGHT SIMULATOR 2002

For nearly 20 years, Flight Simulator has provided aviation enthusiasts with the best available in flight simulation—and Flight Simulator 2002 is better than ever.

Use this book to:

- Learn how to install and configure Flight Simulator 2002.
- Start flying quickly.
- Get basic information about Flight Simulator 2002.
- Learn about new features of Flight Simulator 2002.
- Find out where to go for more information.

INSTALLING FLIGHT SIMULATOR

1. Turn on your computer, and start Microsoft Windows® 98 or later.
 2. Insert **Flight Simulator 2002 Disc 1** into your CD-ROM drive.
 3. Follow the instructions on the screen.
- If your computer doesn't support automatic installation, follow these steps:
1. Click **Start** on the taskbar.
 2. Point to **Settings**, and then select **Control Panel**.
 3. Double-click **Add/Remove Programs**.
 4. On the **Install/Uninstall** tab, click **Install**.
- or-
- Click **Add New Programs**, and then click the **CD or Floppy** button.
5. Follow the instructions that appear on your screen.

INSTALLING FLIGHT SIMULATOR

During setup, you'll have the option of selecting a default or custom installation. Select the default installation to install all files needed to run Flight Simulator in the default location. Select the customized installation to choose one of three installation options: **Compact**, **Complete**, or **Customize Installation**. If you need to conserve hard disk space on your computer, choose the **Compact** setup option.

If you want to optimize flying performance, choose **Complete**. If you are an advanced user and want to choose exactly what gets installed, choose **Customize Installation**.

Note

Installation may require one or more of the Flight Simulator compact discs, depending on the options you choose.

STARTING FLIGHT SIMULATOR

- Click **Start**, point to **Programs**, point to **Microsoft Games**, point to **Flight Simulator 2002**, then select **Flight Simulator 2002**.

-or-

- Double-click the **Flight Simulator 2002** icon on the Windows desktop.

GETTING STARTED

When you start Flight Simulator 2002, the Welcome screen is displayed.



If you're new to Flight Simulator, click **Getting Started** for a basic introduction to flying in the simulator.

You'll see some quick videos brought to you by John and Martha King, aviation instructors from King Schools, Inc. John and Martha are the first and only couple to have earned every license and rating available from the FAA. They'll teach you how to fly an aircraft using just a keyboard or a joystick, and they'll help you familiarize yourself with the basic flight instruments. After you've got the basics down, take an introductory flight

with flight instructor and aviation humorist, Rod Machado. Rod has over 30 years of aviation experience and more than 8,000 hours of flight instruction time. Learn from the best, right from the start.

Once you've learned the ropes, explore Flight Simulator 2002 further. The Welcome screen provides the following options:

Learn to Fly

World-famous instructor Rod Machado teaches you the basics of flying. You'll start as a student pilot and work your way up, earning certificates similar to those received in real-world pilot training. Start each lesson with Ground School (located in the **Library**), and then get into the cockpit with your instructor to practice what you've learned.

Create a Flight

Choose your aircraft, location, weather, and time, and then start flying. Fly a jumbo jet from your local major airport, or do a practice run of your upcoming cross-country solo. You can use this feature to fly what, where, and when you want.

You can also use the Flight Planner to create a detailed flight plan

GETTING STARTED

Select a Flight

Rent a Cessna 172 in Las Vegas and spend a weekend exploring the American Southwest. Work as a bush pilot flying to remote lakes in Alaska, or try your hand at various challenges as a commercial helicopter pilot. Enjoy a virtual career as a pilot, or just take it one Flight at a time while visiting some of the most spectacular scenery ever offered in Flight Simulator.

These Flights have been created for you, and many of them contain detailed briefings that explain the purpose of your trip. Also, if you save your own Flights, you can use this screen to reload them.

Multiplayer

Gather your friends (or find new friends on the MSN® Gaming Zone at www.zone.com) and fly together. Play follow-the-leader as you island-hop in the Caribbean. Try some close formation flying, aerobatic competition, or air races.

WHAT IS FLIGHT SIMULATOR 2002?

Flight Simulator 2002 provides you with aircraft, airports, scenery, instruction, and adventures to explore the world.

Aircraft

Take the controls of a wide variety of aircraft in Flight Simulator 2002!

Aircraft	Description	Aircraft	Description
Sopwith Camel	The Sopwith Camel was the deadliest fighter plane of World War I.	Extra 300S	The 300S is a lightweight aerobatic champion with a 300-horsepower engine and exquisite control harmony.
Schweizer 2-32 Sailplane	The Schweizer 2-32 is an all-metal aerobatic sailplane that has produced many of the world's current soaring records.	 Cessna 208 Caravan Amphibian	The Caravan Amphibian takes you nearly anywhere with both landing gear and floats.
 Cessna Skyhawk 172	A stable and trusty trainer; the C172 is the world's most popular single engine plane.	Learjet 45	The Learjet 45 is one of aviation's best answers to the needs of business transportation.
Cessna Skylane 182 S	The Cessna 182 Skylane is a heavier, more powerful version of its sibling, the 172 Skyhawk.	Boeing 737-400	The Boeing 737-400 is one variant of the most successful line of jetliners ever built.
Cessna Skylane 182R RG	A retractable-gear version of the popular Cessna 182 Skylane.	 Boeing 747-400	The 747-400 is the standard by which other large passenger jets are judged. Its size, range, speed, and capacity are the best in its class.
		Boeing 777-300	The newest plane in the long and proud Boeing family line is the 777, a long-range, fuel-efficient twinjet.
		Bell 206B JetRanger	A winning formula for safety and value has made the JetRanger the world's most popular helicopter series.

WHAT IS FLIGHT SIMULATOR 2002?

Additional aircraft available only in the Professional Edition:

Aircraft	Description
NEW! Beech Baron 58	The Baron combines the attractiveness of Beechcraft design with the reliability of twin engines.
Beechcraft King Air 350	A versatile, proven, work horse of an aircraft, the King Air is a beautiful airplane with classic styling and graceful lines.
NEW! Cessna Grand Caravan	Known as a tough, dependable plane, the Grand Caravan can get you nearly anywhere you want to go.
Mooney Bravo	The Bravo is the fastest single-engine airplane currently produced.

Virtual Cockpits

NEW!

Use your 3-D card to enjoy Flight Simulator 2002 even more. 3-D cockpits include working instruments, and the new Virtual Cockpit view allows pilots to “swivel” their heads and look around the cabin.



WHAT IS FLIGHT SIMULATOR 2002?

Scenery

With Flight Simulator 2002, you can fly anywhere in the world. Whether you're flying above Paris, France, or Paris, Texas, you'll see unprecedented depth and detail, including real-world mountains, rivers, lakes, roads, and landmark buildings. Automatically generated trees and buildings appear on the terrain to create realistic scenery around the world.



From major international airports to tiny rural airstrips, you can take off and land at any of 21,000 airports worldwide. Flight Simulator brings the details to life with the same navigational aids used by

pilots in the real world based on data from the authoritative, worldwide Jeppesen NavData database.

Explore particularly detailed scenery areas with pre-designed **Flights** that take you over Hawaii, the Grand Canyon, and Mt. McKinley. Access **Flights** through the **Select a Flight** option in Flight Simulator.

The Flight Environment

Flying a plane or helicopter isn't just about controlling the aircraft. You also need to navigate, communicate with other aircraft and with air traffic control, and react to changing weather conditions.

Navigation

In Flight Simulator 2002, you have all the same navigation methods at your disposal that real pilots use, from dead reckoning (using landmarks and a compass) to GPS (Global Positioning System) to radio-based navigational aids, such as VORs and NDBs.

WHAT IS FLIGHT SIMULATOR 2002?

Air Traffic Control

NEW!

Flight Simulator 2002 includes realistic, detailed air traffic control for the first time. Real-time, interactive air traffic control clears you from taxi to takeoff to landing. You can ask for and receive clearances, be warned of air traffic near you, get vectors (directions), and hear controllers speaking to other aircraft. Try out the new Air Traffic Control feature within a flight by pressing the ACCENT (") key while you're flying.

Crowded Skies

NEW!

See and hear other traffic wherever you fly. Using artificial intelligence, Flight Simulator 2002 creates realistic air traffic around airports and along your flight path. While en route to a distant shore or practicing takeoffs and landings, you'll keep busy scanning the skies for traffic.

Weather

Flight Simulator 2002 models the real weather conditions in which pilots fly. You can set the cloud cover, winds, visibility, precipitation, and temperature. Or, you can have Flight Simulator download the *actual current weather conditions* for the location in which you're flying.

Flight Instruction and Analysis

Flying Lessons

IMPROVED!

Rod Machado has been a flight instructor for 27 years and has logged over 8,000 hours of flight instruction time. Who better to be your flight instructor for Flight Simulator 2002? With the new Ground School and improved interactive Lessons, you can earn Flight Simulator certifications from student level all the way up to air transport pilot (ATP).

Flight Analysis

NEW!

If you're working to improve your skills or just looking for new challenges, you can check the precision of your flying against a detailed record of your flights. A flight map and graphs show the course, altitude, and speed you maintained during the flight.

Flight Instructor Station

NEW!

Flight Simulator 2002 Professional Edition includes an Instructor's Station that you can use to monitor and interact with Flight Simulator "students" while they fly.

WHAT IS FLIGHT SIMULATOR 2002?

Your Virtual Pilot Career

IMPROVED!

In Flight Simulator 2002, you'll find pre-designed Flights organized into categories that allow you to experience many different kinds of flying that real-world pilots do. Experience a virtual pilot career within Flight Simulator 2002.

Help for Add-on Developers

NEW!

gmax, a 3-D modeling tool from Discreet that is included in Flight Simulator 2002 Professional Edition, helps add-on developers create scenery objects with industry-standard formatting. Create and modify aircraft, too, using the improved Flight Dynamics Editor.

WHERE'S MY MANUAL?

Wondering what happened to your Pilot's Handbook? Flight Simulator 2002 includes several onscreen, printable Handbooks. These Handbooks contain the information you'll need to get the most out of Flight Simulator 2002.

Your Handbooks come in Adobe Acrobat PDF format. This means that they're readable and printable using any operating system that supports the free Adobe Acrobat Reader. If you don't already have Adobe Acrobat Reader, you are given the option to install it when you install Flight Simulator 2002.

You will find the Handbooks in the comprehensive **Library**. On the main screen of Flight Simulator 2002, you'll find the **Library & Help** link on the left side of the page.



WHERE'S MY MANUAL?

Flight Simulator 2002 includes the following useful Handbooks:

Quick Reference Guide

This handy collection provides you with the information you'll most frequently need at your fingertips: a short list of the most frequently used key commands, basic procedures, and the phonetic alphabet used in air traffic control communications.

Aircraft Handbook

This comprehensive collection of information details all the aircraft in the Flight Simulator 2002 fleet. You'll find aircraft specifications, operating tips, flight notes, and histories of every aircraft in the fleet.

Air Traffic Control Handbook

Explore one of Flight Simulator 2002's most exciting new features. Now you can request and receive clearances from controllers, get vectors for an instrument approach, and hear other traffic as you fly. You'll learn how the ATC system works and how to operate within that system in Flight Simulator 2002.

Floatplane Handbook

The Cessna Caravan Amphibian opens up an entire new aviation experience: flying a floatplane. Learn how to master the intricacies of takeoffs, landings, and other water operations.

Rod Machado's Ground School

Rod Machado is one of the world's best-known flight instructors. His ground school classes provide the conceptual information you'll need before you go flying with him in the interactive Lessons.

Rod's virtual classroom and in-flight instruction work together to give you the skills you need to become a better simulation pilot.

Getting More from Flight Simulator 2002

Ready to take it to the next level? When you're wondering what else to do in Flight Simulator 2002, this Handbook helps you get the most out of your Flight Simulator 2002 experience.

WHERE'S MY MANUAL?

In addition, inside the **Aviation Articles** section of the **Library & Help**, you'll find aviation articles contributed by AOPA (the Aircraft Owners and Pilots Association). AOPA is the largest, most influential aviation association in the world. Also in the **Aviation Articles** section are naviga-

tional charts for some of the most interesting areas and airports you visit in your Lessons and Flights. The charts are provided by Jeppesen's SIMCharts. Jeppesen is the world leader in aviation charts and technical data.

FINDING HELP

Whether you're brand new to Flight Simulator or are a long-time Flight Sim fanatic, there are times when you need more information. Here is a quick list of many of the places you can find help throughout Flight Simulator 2002.

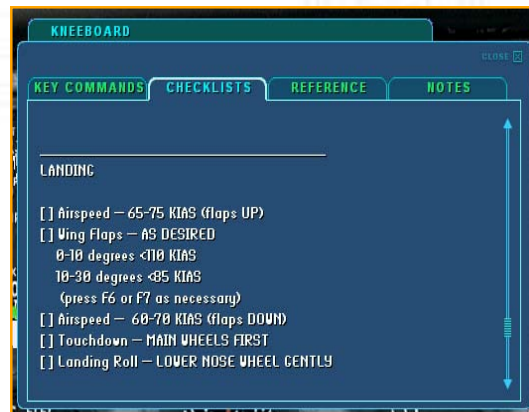
Flight Simulator Help

Flight Simulator 2002 Help contains step-by-step instructions for using Flight Simulator 2002. Help is available literally *on the fly*. You can bring it up mid-flight without stopping your game. Find your answers quickly and continue on your way, virtually uninterrupted. To display help at any time, press **CTRL + ?**.

FINDING HELP

The Kneeboard

Real-world pilots often use kneeboards to keep track of charts, checklists, and other useful information pertaining to their flights. You can customize the Kneeboard in Flight Simulator 2002 to display the information you need most. To display the Kneeboard, press **F10** while you are flying.



Rollover Help

Move your mouse pointer over links and buttons in Flight Simulator 2002 to reveal the helpful, brief descriptions and explanations that will appear at the bottom of your screen.

Flight Simulator 2002 Web Site

The Flight Simulator 2002 Web site is the best place to start browsing for Flight Simulator-related information and products. You'll find:

- News
- Tips
- Articles
- Reference material
- Downloadable extras
- Links to interesting and useful Flight Simulator sites all over the world

In short, it's the first place to turn for *anything* Flight Simulator-related. Connect to the Web site by clicking the Flight Simulator web site button in the **Library & Help** section of Flight Simulator 2002. Or, open your browser and go to www.microsoft.com/games/fs2002.

USING A JOYSTICK, MOUSE, OR KEYBOARD TO FLY

You can fly any aircraft by using your mouse to move the controls in the cockpit. Or, you can fly using your joystick and keyboard commands, which allows you to control the aircraft with even more precision.

Setting Up and Using Joysticks and Other Game Controllers

Flight Simulator 2002 is more realistic when you use a joystick, yoke, or other controller. You can fly more precisely, and the buttons and controls make it easy to change views, adjust the throttle, extend or retract the landing gear and flaps, and operate other aircraft controls.

Flight Simulator 2002 is compatible with joysticks, yokes, game pads, and other controllers supported by Microsoft Windows and DirectInput®. Use the device that works best for you as your primary control. All three types can be customized to suit your needs. Different products have different configurations, so refer to your controller's documentation for its button assignments.

Before you fly, make sure your joystick or other controller is:

- Plugged into your computer.
- Set up in Microsoft Windows.
- Calibrated properly.
- Enabled in Flight Simulator 2002.

Also, make sure you have the latest device drivers. If in doubt, download them from the manufacturer's Web site. For more information about game controllers, see Flight Simulator 2002 **Help**.

Using the Mouse

As you fly, you can use the mouse to manipulate the buttons, knobs, and levers in the cockpit. Just click the control you want to operate. Some controls are toggles (for example, clicking the landing gear lever once retracts the wheels; clicking it again extends them). Other controls, such as the throttle and trim wheel, move through a series of positions. You can drag these controls using the mouse, much as you would move them using your hand in a real airplane.

USING A JOYSTICK, MOUSE, OR KEYBOARD TO FLY

Using the Keyboard

The keyboard is often the best way to view and operate certain aircraft controls and to choose commands and options. By learning which keys do what, you can be more efficient in the Flight Simulator cockpit. Although it's best to use a joystick or yoke as the primary flight control, you can fly the aircraft by using the keyboard to control the ailerons, elevator, and rudder.

A list of frequently used, basic keyboard commands can be found on the inside and outside of the back cover of this book. For a complete list of all possible key commands, see **Getting More from Flight Simulator 2002** in the **Library & Help** section. In addition, the Key Commands tab on the Kneeboard in Flight Simulator (press the **F10** key to display the Kneeboard) features a complete list of keyboard commands.

You'll find a short video about controlling Flight Simulator 2002 aircraft using the keyboard in the **Getting Started** section of the Welcome screen.

Customizing the Controls

In real aircraft, each button, lever, or knob serves a specific function. In Flight Simulator, you can customize the joystick and keyboard commands so that your simulated cockpit works the way you like best. For example, you could reassign the key used to extend and retract the landing gear from the **G** key to another. On the **Options** menu, point to **Controls**, and select **Assignments**. To adjust how sensitive your joystick is, on the **Options** menu, point to **Controls**, and then select **Sensitivities**.

MAKING FLIGHT SIMULATOR 2002 REALLY FLY

When talking about a flight simulation's graphics, *quality* refers to how real the images look on the screen, and *performance* refers to how quickly and smoothly the images move. Higher quality typically means decreased performance, because displaying complex, richly detailed, three-dimensional graphics puts a heavy load on your system. If you're not seeing the graphics quality and performance you expect, this section explains some choices and tradeoffs you can make to optimize your experience.

Improving Quality and Performance

To achieve maximum quality and performance, consider the following options:

Shut down other applications

When you're flying, you probably won't be using other applications, such as word processors and e-mail programs, so close them to free up more of your computer's processing power for Flight Simulator.

Use your 3-D graphics accelerator card

To display Flight Simulator graphics, your computer must convert a three-dimensional world into a two-dimensional image. A 3-D graphics accelerator makes this task easier by taking some of the burden off the main processor. This leaves the main processor with more resources to handle the simulation's flight model. The result? Better performance and graphics quality. To run Flight Simulator 2002, your computer must have a 3-D graphics accelerator card with at least 8 megabytes (MB) of memory.

To take full advantage of your 3-D card, make sure you:

- Set the display options in Flight Simulator 2002 to optimize performance (see "Change display options").
- Download the latest drivers from the manufacturer's Web site.
- Use Flight Simulator 2002 in its Full Screen mode (see "Use Full Screen mode").

MAKING FLIGHT SIMULATOR 2002 REALLY FLY

If you have problems getting your 3-D card to work properly, make sure you've read the Flight Simulator 2002 Readme file and the card manufacturer's documentation.

Get more RAM

Random access memory (RAM) is your computer's short-term memory. Generally, the more of it there is, the faster your computer's "brain" (the CPU) can process data. Your computer needs to have at least 64 MB of RAM to run Flight Simulator 2002.

Get a faster processor.

A Pentium II-300 or faster processor is recommended for optimal performance.

Making a Tradeoff Between Quality and Performance

Choosing between quality and performance depends on what you want to do. If you want to spend an evening reading signs and billboards as you fly the Bell 206B JetRanger helicopter down the glittering streets of Las Vegas, then you're probably willing to sacrifice a little performance for a better view. If, however, you want to test your instrument flying skills

by guiding the Boeing 777-400 into Heathrow in a storm, then smooth movement of the aircraft and the instruments will take precedence over scenery details. No matter what kind of hardware you have, you can make trade-offs between graphics quality and performance.

Explore the following options to find the balance between quality and performance that's right for your needs.

Watch your windows

Flight Simulator runs in a window. The simulation's views and instrument panels are also windows. Increasing the size of windows and displaying multiple windows simultaneously decreases performance, so use as few windows as possible and keep them as small as you can.

MAKING FLIGHT SIMULATOR 2002 REALLY FLY

Change the resolution

Depending on the type of video card and monitor you have, you can run Flight Simulator 2002 at a variety of screen resolutions. The software is designed to run at a minimum resolution of 640 x 480. If your system can handle it, a resolution of 1024 x 768 is optimal. Remember, however, that as you increase resolution to see more detail, you may notice a decrease in performance. Experiment with different resolutions to find the best combination of detail and performance for your needs. For more information about adjusting the screen resolution on your computer, on the Windows **Start** menu, click **Help**, and look up “resolution.”

Use Full Screen mode

Full Screen mode makes the Flight Simulator window fill the entire screen (no menu bar or taskbar) and will likely improve performance. To toggle between Full Screen and Normal modes, press **ALT+ENTER**, or on the **Views** menu,

choose **Full Screen**. To bring up the menu bar while in Full Screen mode, press **ALT**. To set the resolution used in Full Screen mode, on the **Options** menu, point to **Settings**, and choose **Display**.

Change display options

One way to improve performance is to change the display options in Flight Simulator. Each option has a different effect, and changes you make apply to all flights. Turning an option on or off is noticeable only when you see an effect related to that option on the screen. For example, turning the Shadows option off won't have much effect if you're flying in the clouds.

To change display options, on the **Options** menu, point to **Settings**, and choose **Display**.

Change sound preferences

Depending on your computer, changing sound preferences (or turning the sound off) may improve performance. To change sound options, on the **Options** menu, point to **Settings**, and choose **Sound**.

MAKING FLIGHT SIMULATOR 2002 REALLY FLY

Change visibility and other weather settings

Generally speaking, the less scenery you see out of the window, the better the performance will be. Reducing visibility is a simple way to improve performance. To change visibility, on the **World** menu, select **Weather**.



Monitor the frame rate

Monitoring the frame rate (the number of times the screen is redrawn each second) is an easy way to assess Flight Simulator's performance. Press **SHIFT+Z** twice to display the frame-rate counter. When you try the options listed above, check the frame rate to see whether it has improved. Keep in mind, however, that it's how the simulation looks and feels to you that matters most.

Experiment

The best way to make Flight Simulator 2002 really fly on your computer is to experiment. Change something, then see if things look or feel any different. Read the Readme file in the Flight Simulator 2002 directory on your hard drive for additional tips.

MICROSOFT PRODUCT SUPPORT SERVICES

Product Name

Flight Simulator 2002

Support Info Online

<http://support.microsoft.com/directory/productsupportoption.asp>.

In Canada, visit

<http://www.microsoft.ca/support>

Phone Support

(425) 637-9308 in the US, or
(905) 568-3503 in Canada
(toll charges may apply).

Worldwide

Support options, hours and cost in your country or region may differ from the US. Please visit <http://support.microsoft.com> to check with your local office for details.

Conditions

Microsoft's support services are subject to then-current prices, terms, and conditions, which are subject to change without notice.



Personal Support Options

Online Self-Help Options

Get your information online. Try our FAQ's, WebCasts or search our Knowledge Base for articles targeted to your issue at <http://support.microsoft.com/directory>

MICROSOFT PRODUCT SUPPORT SERVICES

Products included with the sale of a new computer

If your product was included with the purchase of your computer, your computer manufacturer provides support for this product version. For contact details please go to <http://support.microsoft.com/directory/directory/oemdirectory.asp>

Paid Assisted Support

(a) Submit your issue online
<http://support.microsoft.com/directory/onlinesr.asp>

(b) For Paid Assisted Support please call us at (800) 936-5700 in the US

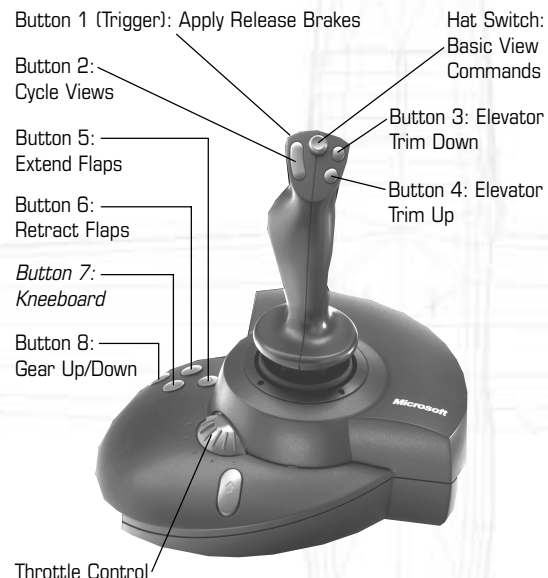
International Support

Important! The entire list of International Support phone numbers can be found in the Technical Support topic of the online Help. Press F1 while in the simulation to find the listing you need. Phone numbers for Microsoft Subsidiaries are subject to change.

For the most recent international listing, please visit <http://support.microsoft.com/directory> and select "worldwide support."

If there is no Microsoft subsidiary office in your country, please contact the establishment from which you obtained your Microsoft product.

KEY COMMANDS



Other Aircraft Commands (Num Lock OFF)

Set Parking Brake **CTRL + . (PERIOD)**
 Apply/Release Brakes **. (PERIOD)**
 Landing Gear Up/Down **G**
 All Lights On/Off **L**
 Autopilot Master Switch On/Off **Z**

View Commands (Num Lock OFF)

Full Screen Mode (no menus
 or taskbar) **ALT + ENTER**
 Display Menus (in Full
 Screen Mode) **ALT**
 Panel On/Off **W**
 Look Around **Shift + Num Pad 1-9,**
 or use your joystick's
 hat switch

Cycle Views (Cockpit, Virtual Cockpit
 Tower, Spot) **S**
 Display/Hide Additional
 Panel Windows (Radios,
 Engine Controls, GPS,
 and so on) **SHIFT + 1-9**
 Display/Hide Kneeboard **F10**
 Cycle Coordinates/
 Frame Rate **SHIFT + Z**

KEY COMMANDS

Create New View Window [(LEFT
BRACKET)
Create New Top-Down
View Window SHIFT +]
(RIGHT BRACKET)
Close View Window]
(RIGHT BRACKET)
Raise seat SHIFT + ENTER
Lower seat SHIFT + BACKSPACE

Basic Slew Commands (Num Lock OFF)

Slew Mode On/Off Y
Move Forward Num Pad 8
Move Backward Num Pad 2
Move Left Num Pad 4
Move Right Num Pad 6
Freeze All Movement Num Pad 5
Move Up Slowly Q or F3
Move Up Quickly F4
Move Down Slowly A
Move Down Quickly F1
Freeze Vertical Movement F2

Simulator Commands (Num Lock OFF)

Pause P
Sound On/Off Q
Reset Current Flight CTRL + ;
(SEMICOLON)
Save Flight ; (SEMICOLON)
Exit Flight Simulator CTRL + C,
or ALT + F4

Control Surface Commands (Num Lock OFF)

Bank Left (ailerons) Num Pad 4
Bank Right (ailerons) Num Pad 6
Yaw Left (rudder) Num Pad 0
Yaw Right (rudder) Num Pad ENTER
Center Ailerons
and Rudder Num Pad 5
Pitch Down (elevator) Num Pad 8
Pitch Up (elevator) Num Pad 2
Elevator Trim Up Num Pad 1
Elevator Trim Down Num Pad 7
Retract Flaps (fully) F5

KEY COMMANDS

Retract Flaps (in increments) **F6**
Extend Flaps (in increments) **F7**
Extend Flaps (fully) **F8**
Extend/Retract Spoilers/
Airbrakes / (**FOREWARD SLASH**)
Arm Spoilers (jets) **SHIFT + / (Slash)**

Engine Commands (Num Lock OFF)

Engine Autostart **CTRL + E**
Cut Throttle **F1**
Reverse Thrust (turboprops/jets) **F2**
(hold down)
Decrease Throttle **F2 or Num Pad 3**
Increase Throttle **F3 or Num Pad 9**
Full Throttle **F4**
Set Prop RPM to Low **CTRL + F1**
Decrease Prop RPM **CTRL+ F2**
Increase Prop RPM **CTRL+ F3**

Set Prop RPM to High **CTRL+ F4**
Set Mixture to
Idle Cutoff **CTRL + SHIFT + F1**
Lean Mixture **CTRL + SHIFT + F2**
Enrich Mixture **CTRL + SHIFT + F3**
Set Mixture to Rich ... **CTRL+ SHIFT + F4**
Carburetor Heat On/Off **H**

Air Traffic Control Commands

View ATC Menu **ACCENT (`) or**
SCROLL LOCK

Note:

Number Pad numbers will not work for ATC. Use the numbers at the top of your keyboard, and refer to the onscreen ATC menu for more information.